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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/085,690 | 02/27/2002 | Carol J. Wilson | 10010803-1 | 1605 |

7590 10/10/2003

AGILENT TECHNOLOGIES, INC.
Intellectual Property Administration
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EXAMINER

STAHL, MICHAEL J

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 10/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|------------------------------|------------------------|---------------------|--|
| | 10/085,690 | WILSON ET AL. | |
| | Examiner | Art Unit | |
| | Mike Stahl | 2874 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____ .

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,11 and 18 is/are rejected.

7) Claim(s) 2-10 and 12-17 is/are objected to.

8) Claim(s) 19-21 are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 27 February 2002 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____ .
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . 6) Other: _____ .

Specification

The disclosure is objected to because of the following informalities: At p. 6 lines 22 and 24 the specification refers to an application number 09/846,056. It is believed that the number should instead be 09/846,856. Applicant should verify the application number and correct the cited portion of the specification if necessary.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 11, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Villeneuve et al. (US 6130969, cited by applicant).

Villeneuve discloses a photonic crystal drop filter (fig. 3) comprising a photonic crystal **302**; a first waveguide **304** transmitting light having a frequency within a bandgap of the crystal; a second waveguide **306**; and a resonant cavity **308** or **310** connecting the first and second waveguides for transferring at least one wavelength of light from the first waveguide to the second waveguide. The channel drop filters in Villeneuve may be configured to be tunable as described at col. 7 line 55 – col. 8 line 1. The apparatus just described meets the limitations of claim 1. As to claims 11 and 18, the Villeneuve filters are generally used in a WDM system such that the first waveguide (the bus) conducts an information signal having multiple

wavelengths at least one of which is to be dropped by the filter (see e.g. col. 1 lines 35-51 or claim 1).

Allowable Subject Matter

Claims 2-10 and 12-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 19-21 are allowed.

As to claims 2, 7, and 17, the second waveguide in Villeneuve is parallel to the first waveguide such that it does not extend from the resonant cavity to a third side of the photonic crystal as required by these claims. The examiner is interpreting “third side” in light of the specification to mean a distinct side, other than the first side or the second side. Villeneuve does not disclose or suggest an embodiment in which the second waveguide extends from the resonant cavity to a third side. Claims 8-10 are allowable by dependence from claim 7. It is noted that Koops et al. (US 6310991) discloses a second waveguide which extends to a third side (figs. 3 and 5), but Koops fails to teach or suggest a resonant cavity between the first and second waveguides. Instead it appears that Koops uses the mere spacing of posts (“needles”) in the center of the waveguides to control the dropped frequency. Prather et al. (US 2002/0191905) also discloses second waveguides extending to a third side, and discloses resonant cavities, but is not available as prior art and does not show or suggest any tuning members.

As to claims 3, 12, or 13, Villeneuve does not disclose a dielectric tuning member *in* the second waveguide or using the second waveguide itself as a tuning member. Villeneuve

mentions tuning the dielectric constant of the resonator system or its surroundings but does not describe or suggest tuning the waveguides themselves or an element within them. Claims 4 and 14 are allowable by dependence from claims 3 and 13 respectively.

As to claims 5, 15, and 19, Villeneuve fails to teach or suggest a movable tuning member. Although Villeneuve mentions a piezo-electric means of changing the dielectric constant at col. 7 lines 63-65, which presumably could involve a movable tuning member variably compressing at least one of the dielectric posts, the reference provides no guidance to a person of ordinary skill in the art as to how to implement a piezo-electric tuning means. It is noted that Marcatili (US 3589794, figs. 19 and 24) and Little et al. (US 6411752, fig. 17) disclose movable dielectric tuning members which can be used with channel dropping filters, but neither reference mentions photonic crystals or provides a clear motivation to a person of ordinary skill in the art to use the disclosed tuning members with a device based on a photonic crystal. Claims 6, 16, and 20-21 are allowable by dependence from these respective claims.

Conclusion

The references made of record and not relied upon are considered pertinent to applicant's disclosure: US 5784400, US 6075915, US 6198860, US 2002/0159733, and US 2003/0161577.

Any inquiry concerning this communication should be directed to Mike Stahl at (703) 305-1520. Official communications eligible for submission by facsimile may be faxed to (703) 872-9318 (before final) or (703) 872-9319 (after final). Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at (703) 308-0956 or to the technical support staff supervisor at (703) 308-3072.

MJS

Michael J. Stahl
Patent Examiner
Art Unit 2874

September 21, 2003

A handwritten signature in black ink, appearing to read "Michael J. Stahl", is positioned at the bottom right of the page. The signature is somewhat stylized and includes a small flourish at the end.